KEY

Heredity Study Guide - Path B

Use this to help you review for your quiz on Thursday.
In addition to completing these questions, practice the vocabulary on the vocab sheet!

Part 1: Genotype and Phenotype

Monster Genes

Trait	Allele 1	Allele 2
Eye	Two small eyes (E)	One large eye (e)
Eye Color (incomplete)	Red (R)	White (W)
Skin Color (codominant)	Green (G)	Blue (B)
Tail Shape	Curly (C)	Straight (c)
Tail Color	Purple (P)	Orange (p)

1. If a monster is heterozygous for their tail color, what is the genotype? Pp
2. If a monster is homozygous dominant for tail shape, what is the phenotype? curly
3. If the genotype is EE, what is the the phenotype? two small eyes
4. If the phenotype is white eyes, what is the genotype? WW
5. If the genotype is RW, what is the eye color? pink
6. If the genotype is RR, what is the eye color? red
7. If the skin color is blue and green, what is the genotype? BG
8. If the skin color is green, what is the genotype? GG
9. If the genotype is Pp, what is the tail color? purple
10. If the phenotype is one large eye, what is the genotype? ee

Part 2: Punnet Squares

1. B= Brown eyes b= blue eyes
   Mom= Bb Dad= BB

	B	b
B	BB	Bb
B	BB	Bb

What are the genotypes and phenotypes of the children?

Genotypes: BB, Bb

Phenotypes: brown eyes

2. Curly hair (h) is recessive, and straight hair (H) is dominant. A woman with curly hair marries a man who is homozygous dominant for straight hair.

	h	h
H	Hh	Hh
H	Hh	Hh

What percentage of the children will have curly hair?

0%

3. Black hair is homozygous dominant. Brown hair is heterozygous. Blonde hair is homozygous recessive. (This is an example of incomplete dominance.) A woman with brown hair marries a man with brown hair. Black hair = B; Blonde hair = b

	B	b
B	BB	Bb
b	Bb	bb

What are the possible genotypes of their children?

BB, Bb, bb

What percentage of the children will have blonde hair?

25%

4. Attached earlobes are dominant over free hanging earlobes. Complete the Punnett Square for the following individuals: Mom=EE and Dad=Ee

	E	E
E	EE	EE
e	Ee	Ee

What percentage of the children have a homozygous genotype?

50%

5. A mythical bird can be blue (B), white (W), or white with blue-tipped feathers (BW). This is an example of codominance. Create the cross for a mom that is blue and a dad that is white with blue-tipped feathers.

	B	B
B	BB	BB
W	BW	BW

What are the possible phenotypes of the offspring?

white w/ blue-tipped feathers, blue

6. Height follows the rules of Incomplete dominance.
TT=tall (5'11"-6'2"); Tt=medium height (5'4"-5'10"); tt=short (5'3" or smaller)

Create the cross if Mom is 5'5" and Dad is 6'0".

	T	t
T	TT	Tt
T	TT	Tt

What percentage of the children will be short? 0%.

What percentage of the children will be medium height? 50%.

What percentage of the children will be tall? 50%.